

حمل الآن

مجاناً وحصرياً

المراجعة رقم (1)

اختبار شهر مارس





Monthly tests of March

TEST**1**

Total mark

20**1 Choose the correct answer from those given :****[12 Marks]**

- (1) If $\frac{d}{dX} (aX)^3 = 24$ at $X = 1$, then $a = \dots\dots\dots$
- (a) $\frac{1}{4}$ (b) $1\frac{1}{2}$ (c) 1 (d) 2
- (2) The average rate of change of the function $f : f(X) = X^2$ when X changes from 5 to 5.2 is $\dots\dots\dots$
- (a) 0.1 (b) 0.2 (c) 10.2 (d) 2.04
- (3) The number of terms of the geometric sequence (5, 10, 20, ..., 1280) equals $\dots\dots\dots$ terms.
- (a) 8 (b) 7 (c) 10 (d) 9
- (4) If $y = z^3 - 5$, $z = 2X^2 - 3X$, then $\frac{dy}{dX} = \dots\dots\dots$ at $X = 1$
- (a) 1 (b) 3 (c) 5 (d) 7
- (5) If $X > 0$, then the common ratio of the geometric sequence (4, $X - 3$, $2X + 6$, ...) equals $\dots\dots\dots$
- (a) 1 (b) 5 (c) 3 (d) 24
- (6) How many terms should be taken from the arithmetic sequence (35, 30, 25, ...) starting from the first term to get sum 135?
- (a) 6 or 9 (b) 6 or 15 (c) 9 or 15 (d) 15 or 18
- (7) $\sum_{r=1}^5 (2r + 1) = \dots\dots\dots$
- (a) 25 (b) 3 (c) 35 (d) 40
- (8) If $f(X) = \sqrt{X^2 + 9}$, then $\hat{f}(-4) = \dots\dots\dots$
- (a) $-\frac{4}{5}$ (b) 5 (c) $\frac{1}{10}$ (d) $-\frac{1}{10}$
- (9) The equation of the tangent to the curve $y = (3X - 5)^7$ at $X = 2$ is $\dots\dots\dots$
- (a) $y + 21X + 41 = 0$ (b) $X + 21y = 41$
- (c) $X - 21y = 41$ (d) $y - 21X + 41 = 0$

- (10) The geometric mean of two positive numbers equals 8 and their arithmetic mean is more than their geometric mean by 2, then the difference between the two numbers =
- (a) 4 (b) 8 (c) 12 (d) 16
- (11) In an arithmetic sequence, $T_{17} = 73$, $T_{73} = 17$, then order of the term whose value equals zero is
- (a) 36 (b) 89 (c) 90 (d) 91
- (12) If $f(x) = x + \frac{9}{x}$, then $\hat{f}(x) = 0$ when $x = \dots\dots\dots$
- (a) 3 (b) -3 (c) ± 3 (d) ± 9

2 Answer the following questions :

- (1) In the geometric sequence $\left(\frac{1}{8}, \frac{1}{4}, \frac{1}{2}, 1, \dots\right)$ find the order of the term whose value = 1024 [2 Marks]
- (2) If the sum of first n terms from an arithmetic sequence defined by the rule $S_n = 2n(7 - n)$ find the number of terms should be taken from the first term to get sum equals -240 [2 Marks]
- (3) Find the average rate of change in the volume of the cube when its edge length varies from 5 cm. to 7 cm. [2 Marks]
- (4) Find the point lies on the curve : $y = x^2 - 3x + 1$ at which the slope of the tangent equals 3 [2 Marks]

TEST

2

Total mark

20

1 Choose the correct answer from those given :

[12 Marks]

- (1) $\frac{d}{dx}(3x^2 + 5x) = \dots\dots\dots$ at $x = -1$
- (a) -1 (b) -3 (c) -6 (d) 3
- (2) The order of the term whose value equals zero in the arithmetic sequence (22, 20, 18, ...) is
- (a) 8 (b) 10 (c) 12 (d) 14
- (3) The value of the series $\sum_{r=3}^7 (3r - 1)$ equals
- (a) 62 (b) 70 (c) 75 (d) 77

- (4) The rate of change of the function $f : f(x) = \frac{1}{x}$ at $x = \sqrt{3}$ equals
 (a) 3 (b) $\frac{1}{3}$ (c) $-\frac{1}{3}$ (d) -3
- (5) If $y = (x^2 + 2)(5 - x)$, then $\frac{dy}{dx} = \dots\dots\dots$ at $x = 1$
 (a) -15 (b) 5 (c) 7 (d) 9
- (6) If some arithmetic means are inserted between 8 and 62 and the sum of the second and sixth means equals 40, then the number of this means =
 (a) 13 (b) 15 (c) 17 (d) 19
- (7) The slope of tangent of the curve of the function $y = (2x - 3)^5$ at $x = 2$ equals
 (a) 1 (b) $\frac{1}{12}$ (c) 5 (d) 10
- (8) If $y = (z + 1)^3$, $z = x^5 - 3$, then $\frac{dy}{dx} = \dots\dots\dots$ at $x = 1$
 (a) 15 (b) -15 (c) 60 (d) -60
- (9) If (8, a, ..., b, 68) is an arithmetic sequence, the number of its terms 16, then $b - a = \dots\dots\dots$
 (a) 64 (b) 76 (c) 52 (d) 60
- (10) The average rate of change of the function f where $f(x) = x^2$ when x changes from 3 to 3.1 equals
 (a) 0.6 (b) 6.1 (c) 9 (d) 0.61
- (11) The next term in the geometric sequence $(8, 6, \frac{9}{2}, \frac{27}{8}, \dots)$ is
 (a) $\frac{11}{8}$ (b) $\frac{27}{16}$ (c) $\frac{9}{4}$ (d) $\frac{81}{32}$
- (12) First negative term in the arithmetic sequence (96, 93, 90, ...) is
 (a) T_{33} (b) T_{34} (c) T_{35} (d) T_{36}

2 Answer the following questions :

- (1) In the sequence (32, 28, 24, ...) find the least number of terms should be taken starting from the first term which makes the sum is as great as possible. [2 Marks]
- (2) The third term of a geometric sequence is 9, the sixth term is 243
 Find the sequence. [2 Marks]
- (3) If $y = 4x^3 - 5x^2 + 4x + 9$, find : $\frac{dy}{dx}$ [2 Marks]
- (4) Find the equation of the tangent to the curve of the function : $y = (x - 1)(x + 1)$ at each of the points of intersection of the curve with x -axis. [2 Marks]

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجانا وحصريا

المراجعة رقم (2)

اختبار شهر مارس





1 الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - الأداء الصفى - الأسبوع الأول 1

First: Algebra Unit 1(Sequences and series) (Sequences – General Term)

- 1) Find the sixth term in the sequence (T_n) where: $T_n = 3n + 1$
- 2) In the sequence $(1, 8, 27, 64, \dots)$, Find the general term, the find T_5
- 3) Find the fourth term and the fifth term in the sequence (T_n) where:
 $T_1 = 2, T_n = 3T_{n-1}$ where $n > 1$
- 4) Write the first five terms in the sequence (T_n) where: $T_n = \frac{n}{n+1}$
- 5) In the sequence (T_n) if: $T_1 = 2$ and $T_{n+1} = nT_n$, then find T_3

Second: Calculus and integration Unit 3: Differentiation

(Variation – Function of variation)

- 6) If $f(x) = 5x - 1$, then find the variation of the function f when x changes from 2 to 2.1
- 7) If $f(x) = x^2 + x$, then find the variation of the function f when x changes from 1 to 2
- 8) A squared lamina expands regularly such that it preserves its shape, calculate the variation in its perimeter when its side length changes from 3 cm to 3.1 cm.
- 9) If $f(x) = x^2 - 1$, then find the variation function of the function $v(h)$ at $x = 2$, then calculate $v(0.1)$
- 10) If $f(x) = 3x$, then find the variation function $v(h)$ at $x = 2$, then calculate $v(0.1)$



① الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - الأداء المنزلى - الأسبوع الأول ①

First: Algebra Unit 1(Sequences and series) (Sequences – General Term)

- 1) Find the sixth term in the sequence (T_n) where: $T_n = 2n + 3$
- 2) In the sequence $(1, 4, 9, 16, \dots)$, Find the general term, the find T_7
- 3) Find the fourth term and the fifth term in the sequence (T_n) where:
 $T_1 = 3, T_n = 2T_{n-1}$ where $n > 1$

4) Write the first five terms in the sequence (T_n) where: $T_n = \frac{n-1}{n+1}$

5) In the sequence (T_n) if: $T_1 = 3$ and $T_{n+1} = nT_n$, then find T_3

Second: Calculus and integration Unit 3: Differentiation

(Variation – Function of variation)

- 6) If $f(x) = 3x + 1$, then find the variation of the function f when x changes from 1 to 1.1
- 7) If $f(x) = x^2 - x$, then find the variation of the function f when x changes from 2 to 3
- 8) A squared lamina expands regularly such that it preserves its shape, calculate the variation in its surface area when its side length changes from 3 cm to 3.1 cm.
- 9) If $f(x) = x^2 + 1$, then find the variation function of the function $v(h)$ at $x = 2$, then calculate $v(0.1)$
- 10) If $f(x) = 2x$, then find the variation function $v(h)$ at $x = 3$, then calculate $v(1)$



الرياضيات العامة للصف الثاني الثانوي (القسم الأدبي) باللغة الانجليزية الأداء الصفي الأسبوع الثاني

First: Algebra Unit 1(Sequences and series continue)

1) Show which of the following sequences is finite and which is infinite:

a- (1 , 4 , 7 , 11,)

b- (3 , 5 , 7 , 9, ,21)

2) Write the first three terms in the sequence (T_n) where: $T_n = n^2 - 1$, $n \in \mathbb{Z}^+$ showing whether the sequence is finite or infinite.

3) Write the first three terms in the sequence (T_n) where: $T_n = n + n^2$, $n \in \{1, 2, 3, 4, 5\}$ showing whether the sequence is finite or infinite.

4) Expand each of the following series:

a- $\sum_{r=1}^5 (3r - 2)$

b- $\sum_{r=1}^{\infty} \left(\frac{1}{2}\right)^{r-1}$

5) Expand the series: $\sum_{r=1}^5 (2r + 1)$, find the sum of the expansion, then verify

the result using a calculator.



Second: Calculus and integration Unit 3: Differentiation

- 6) If $f(x) = 5x - 1$, then find the average rate of change of the function f when x changes from 1 to 2
- 7) If $f(x) = x^2$, then find the average rate of change function at $x = 3$, then find $A(0.1)$
- 8) Find the average rate of change of the volume of a cube when its edge length changes from 3 cm to 4 cm.
- 9) If $f(x) = 4x$, then find the rate of change of the function f at $x = 1$
- 10) A circular shape lamina expands regularly such that it preserves its shape, calculate the rate of change of its surface area when its radius equals 5 cm



الرياضيات العامة للصف الثاني الثانوي (القسم الأدبي) باللغة الانجليزية الأداء المنزلي الأسبوع الثاني

First: Algebra Unit 1(Sequences and series continue)

1) Show which of the following sequences is finite and which is infinite:

a- $(2, 4, 6, 8, \dots)$

b- $(5, 10, 15, 20, \dots, 100)$

2) Write the first three terms in the sequence (T_n) where: $T_n = n^3$

, $n \in \mathbb{Z}^+$ showing whether the sequence is finite or infinite.

3) Write the first three terms in the sequence (T_n) where: $T_n = n + 7$

, $n \in \{1, 2, 3, 4, 5\}$ showing whether the sequence is finite or infinite.

4) Expand each of the following series:

a- $\sum_{r=1}^6 (r + 1)$

b- $\sum_{r=1}^{\infty} (2)^{r-1}$

5) Expand the series: $\sum_{r=1}^5 (3r - 2)$, find the sum of the expansion, then verify

the result using a calculator.



Second: Calculus and integration Unit 3: Differentiation

6) If $f(x) = 2x + 1$, then find the average rate of change of the function f when x changes from 3 to 4

7) If $f(x) = x^2 + 3$, then find the average rate of change function at $x = 1$, then find $A(0.1)$

8) Find the average rate of change of the surface area of a cube when its edge length changes from 1 cm to 2 cm.

9) If $f(x) = x + 2$, then find the rate of change of the function f at $x = 1$

10) A circular shape lamina expands regularly such that it preserves its shape, calculate the rate of change of its surface area when its radius equals 3 cm



الرياضيات العامة للصف الثاني الثانوي (القسم الأدبي) باللغة الانجليزية التقييم الأسبوع الثاني

First Group

- 1) Write the first three terms in the sequence (T_n) where: $T_n = 5n + 1$, $n \in \mathbb{Z}^+$ showing whether the sequence is finite or infinite.
- 2) Expand the series: $\sum_{r=1}^5 (3r + 1)$, find the sum of the expansion
- 3) If $f(x) = 3x + 5$, then find the variation function V at $x = 1$
- 4) If $f(x) = 2x - 1$, then find the average rate of change of the function f at $x = 1$, then find $A(0.1)$
- 5) If $f(x) = 3x$, then find the rate of change of the function f at $x = 1$

Second Group

- 1) Write the first three terms in the sequence (T_n) where: $T_n = 2n + 3$, $n \in \mathbb{Z}^+$ showing whether the sequence is finite or infinite.
- 2) Expand the series: $\sum_{r=1}^5 (2r + 3)$, find the sum of the expansion
- 3) If $f(x) = 5x + 3$, then find the variation function V at $x = 2$
- 4) If $f(x) = 4x - 1$, then find the average rate of change of the function f at $x = 1$, then find $A(0.1)$
- 5) If $f(x) = x + 3$, then find the rate of change of the function f at $x = 5$



Third Group

- 1) Write the first three terms in the sequence (T_n) where: $T_n = n + 4$, $n \in \mathbb{Z}^+$ showing whether the sequence is finite or infinite.
- 2) Expand the series: $\sum_{r=1}^5 (7r + 1)$, find the sum of the expansion
- 3) If $f(x) = 2x + 1$, then find the variation function V at $x = 3$
- 4) If $f(x) = 4x - 3$, then find the average rate of change of the function f at $x = 1$, then find $A(0.1)$
- 5) If $f(x) = 7x$, then find the rate of change of the function f at $x = 5$



الرياضيات العامة للصف الثاني الثانوي (القسم الأدبي) باللغة الانجليزية الأداء الصفّي الأسبوع الثالث

First: Algebra Unit 1(Sequences and series continue)

1) Determine which of the following sequences is Arithmetic sequence and which is NOT, then find the common difference in case the sequence is arithmetic:

a- (4 , 8 , 12 , 16 , 20)

b- (−5 , −11 , −17 , −23)

c- (1 , 2 , 4 , 8 ,)

2) Prove that the sequence (T_n) where: $T_n = 2n + 1$

, $n \in \mathbb{Z}^+$ is an arithmetic sequence, then find its common difference.

3) Prove that the sequence (T_n) where: $T_n = -2n + 3$

, $n \in \mathbb{Z}^+$ is a decreasing sequence.

4) Write the first five terms in the arithmetic sequence at which its first term is 2 and its common difference is 5.

5) Prove that the sequence (T_n) where: $T_n = 3n + 1$

, $n \in \mathbb{Z}^+$ is an increasing sequence.



Second: Calculus and integration Unit 3: Differentiation

- 6) Find the slope of the tangent to the curve $f(x) = x^2$ at point $(\frac{1}{2}, \frac{1}{4})$, then find measure of the positive angle it makes with the positive direction of the x axis.
- 7) Using the definition find the first derivative of the function: $f(x) = 7$
- 8) Using the definition find the first derivative of the function: $f(x) = x + 1$
- 9) Using the definition find the first derivative of the function: $f(x) = \sqrt{x}$, then find $f'(4)$.
- 10) Find the first derivative of the function: $f(x) = \frac{1}{x}$, then the values of x at which the function f is NOT differentiable.



الرياضيات العامة للصف الثاني الثانوي (القسم الأدبي) باللغة الانجليزية الأداء المنزلي الأسبوع الثالث

First: Algebra Unit 1(Sequences and series continue)

1) Determine which of the following sequences is Arithmetic sequence and which is NOT, then find the common difference in case the sequence is arithmetic:

a- (3, 6 , 9 , 12, 15)

b- (−1 , −5 , −9 , −13 ,)

c- (5 , 10 , 20 , 40,)

2) Prove that the sequence (T_n) where: $T_n = 3n + 5$

, $n \in \mathbb{Z}^+$ is arithmetic sequence, then find its common difference.

3) Prove that the sequence (T_n) where: $T_n = -n + 1$

, $n \in \mathbb{Z}^+$ is a decreasing sequence.

4) Write the first five terms in the arithmetic sequence at which its first term is 6 and its common difference is 3.

5) Prove that the sequence (T_n) where: $T_n = 5n + 2$

, $n \in \mathbb{Z}^+$ is an increasing sequence.



Second: Calculus and integration Unit 3: Differentiation

- 6) Find the slope of the tangent to the curve $f(x) = \frac{1}{2} x^2$ at point $(1, \frac{1}{2})$, then find measure of the positive angle it makes with the positive direction of the x axis.
- 7) Using the definition find the first derivative of the function: $f(x) = 6$
- 8) Using the definition find the first derivative of the function: $f(x) = x + 2$
- 9) Using the definition find the first derivative of the function: $f(x) = \sqrt{2x}$, then find $f'(2)$.
- 10) Find the first derivative of the function: $f(x) = \frac{1}{x-1}$, then the values of x at which the function f is NOT differentiable.



الرياضيات العامة للصف الثاني الثانوي (القسم الأدبي) باللغة الانجليزية التقييم الأسبوع الثالث

First Group

- 1) Prove that the sequence (T_n) where: $T_n = 7n + 1$, $n \in \mathbb{Z}^+$ is an arithmetic sequence, then find its common difference.
- 2) Write the first five terms in the arithmetic sequence at which its first term is 5 and its common difference is 2.
- 3) Prove that the sequence (T_n) where: $T_n = 3n + 1$, $n \in \mathbb{Z}^+$ is an increasing sequence.
- 4) Find the slope of the tangent to the curve : $f(x) = \sqrt{2x}$, at the point $(2, 2)$.
- 5) Using the definition find the first derivative of the function: $f(x) = x + 4$

Second Group

- 1) Prove that the sequence (T_n) where: $T_n = 3n + 3$, $n \in \mathbb{Z}^+$ is arithmetic sequence, then find its common difference.
- 2) Write the first five terms in the arithmetic sequence at which its first term is 9 and its common difference is 3.
- 3) Prove that the sequence (T_n) where: $T_n = 4n + 3$, $n \in \mathbb{Z}^+$ is an increasing sequence.
- 4) Find the slope of the tangent to the curve :
$$f(x) = \sqrt{3x}, \text{ at the point } (3, 3).$$
- 5) Using the definition find the first derivative of the function: $f(x) = x + 5$



Third Group

- 1) Prove that the sequence (T_n) where: $T_n = n + 1$, $n \in \mathbb{Z}^+$ is arithmetic sequence, then find its common difference.
- 2) Write the first five terms in the arithmetic sequence at which its first term is 2 and its common difference is 2.
- 3) Prove that the sequence (T_n) where: $T_n = 5n + 7$, $n \in \mathbb{Z}^+$ is an increasing sequence.
- 4) Find the slope of the tangent to the curve :
$$f(x) = \sqrt{5x}, \text{ at the point } (5, 5).$$
- 5) Using the definition find the first derivative of the function: $f(x) = x + 6$



④ الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - الأداء الصفى - الأسبوع الرابع ④

First: Algebra Unit 1(Sequences and series continue)

1) Find the arithmetic sequence (T_n) in which $T_8 = 9$ and $T_9 = 8$

Solu:

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2) Find the number of terms of the arithmetic sequence (7,9, 11,.....,65)
, then find its tenth term from the end.

Solu:

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3) Find the arithmetic sequence (T_n) in which $T_1 = 4$ and $T_7 = 34$

Solu:

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4) Insert fifteen arithmetic means between 15 and 105

Solu:

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5) Find the general term of the arithmetic sequence (63,59, 55....., -133), then find the number of terms of this sequence.

Solu:

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6) Find the arithmetic sequence in which its fourth term is 18 and its seventh term is 27.

Solu:

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7) If 36, x , 24 , y are four consecutive terms of an arithmetic sequence, then find the value of x and y.

Solu:

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8) In the arithmetic sequence (5x+6 , 3x+15, , 50x-9 , 40x + 16)find the value of x, then find the number of terms of this sequence .

Solu:

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Second: Calculus and integration Unit 3: Differentiation

9) Find $\frac{dy}{dx}$ in each of the following:

a) $y = x^7$

b) $y = x^{\frac{7}{9}}$

c) $y = \pi$

Solu:

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10) Find $\frac{dy}{dx}$ in each of the following:

a) $y = \sqrt{x}$

b) $y = \frac{1}{x}$

c) $y = \pi^2$

Solu:

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④ الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - الأداء المنزلى - الأسبوع الرابع ④

First: Algebra Unit 1(Sequences and series continue)

1) Find the arithmetic sequence (T_n) in which $T_6 = 7$ and $T_7 = 6$

Solu:

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2) Find the number of terms of the arithmetic sequence (3,5, 7,.....,61)
, then find its seventh term from the end.

Solu:

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3) Find the arithmetic sequence (T_n) in which $T_1 = 5$ and $T_6 = 35$

Solu:

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4) Insert 19 arithmetic means between 10 and 110

Solu:

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5) Find the general term of the arithmetic sequence $(-33, -30, -27, \dots, 105)$, then find the number of terms of this sequence.

Solu:

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6) Find the arithmetic sequence in which its fourth term is 20 and its seventh term is 29.

Solu:

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7) If 30, x , 18, y are four consecutive terms of an arithmetic sequence, then find the value of x and y .

Solu:

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8) In the arithmetic sequence $(5x+4, 3x+13, \dots, 50x-11, 40x+14)$ find the value of x , then find the number of terms of this sequence .

Solu:

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Second: Calculus and integration Unit 3: Differentiation

9) Find $\frac{dy}{dx}$ in each of the following:

a) $y = x^9$

b) $y = x^{\frac{2}{3}}$

c) $y = -\pi$

Solu:

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10) Find $\frac{dy}{dx}$ in each of the following:

a) $y = \sqrt{x^3}$

b) $y = \frac{1}{x^2}$

c) $y = \pi^3$

Solu:

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④ الرياضيات العامة لغات - الصف الثانى الثانوي - الشعبة الأدبية - التقييمات الأسبوعية - الأسبوع الرابع ④

First Group

1) Find the general term of the arithmetic sequence (1, 3, 5,....., 99), then find the number of terms of this sequence.

Solu:

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2) Find the arithmetic sequence (T_n) in which $T_{12} = 11$ and $T_{11} = 12$

Solu:

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3) Insert 21 arithmetic means between 5 and 115

Solu:

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4) Find $\frac{dy}{dx}$ in each of the following:

a) $y = x^6$ b) $y = -7$

Solu:

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5) Find $\frac{dy}{dx}$ in each of the following:

a) $y = \sqrt{x^5}$ b) $y = \frac{1}{x^3}$

Solu:

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Second Group

1) Find the general term of the arithmetic sequence (2, 4, 6,....., 100), then find the number of terms of this sequence.

Solu:

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2) Find the arithmetic sequence (T_n) in which $T_{13} = 12$ and $T_{12} = 13$

Solu:

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3) Insert 21 arithmetic means between 4 and 114

Solu:

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4) Find $\frac{dy}{dx}$ in each of the following:

a) $y = x^8$

b) $y = -8$

Solu:

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5) Find $\frac{dy}{dx}$ in each of the following:

a) $y = \sqrt{x^7}$

b) $y = \frac{1}{x^5}$

Solu:

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Third Group

1) Find the general term of the arithmetic sequence (3, 6, 9,....., 99), then find the number of terms of this sequence.

Solu:

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.....

2) Find the arithmetic sequence (T_n) in which $T_{14} = 15$ and $T_{15} = 14$

Solu:

.....

.....

.....

3) Insert 21 arithmetic means between 3 and 113

Solu:

.....

.....

.....

4) Find $\frac{dy}{dx}$ in each of the following:

a) $y = x^4$

b) $y = -4$

Solu:

.....

5) Find $\frac{dy}{dx}$ in each of the following:

a) $y = \sqrt{x^3}$

b) $y = \frac{1}{x^7}$

Solu:

.....



⑤ الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - الأداء الصفى - الأسبوع الخامس ⑤

First: Algebra Unit 1(Sequences and series continue)

1) Find: $\sum_{r=1}^{50} (3r - 2)$

Solu:

.....

.....

2) Find sum of the arithmetic series: $7 + 9 + 11 + \dots + 77$

Solu:

.....

.....

3) In the arithmetic series: $4 + 9 + 14 + 19 + \dots$

Find sum of 10 terms of the series starting with its fifth term.

Solu:

.....

.....

4) Find the sum of all NATURAL numbers between 11 and 111 that are divisible by 5.

Solu:

.....

.....

5) How many terms should be taken from the arithmetic sequence?

(63, 59, 55,), starting from its first term for the sum is to be maximum, then find that sum.

Solu:

.....

.....



6) Find sum of the first 30 terms of the sequence (T_n) , where $T_n = 2n + 1$

Solu:

.....

.....

Second: Calculus and integration **Unit 3: Differentiation**

7) Find $\frac{dy}{dx}$ if: $y = \sqrt{x} (\sqrt{x} + 1)$, then find $\frac{dy}{dx}$ at $x = 4$

Solu:

.....

.....

8) Find $\frac{dy}{dx}$ if: $y = (5x^3 - 7x)(2x + 1)$

Solu:

.....

.....

9) Find $\frac{dy}{dx}$ if $y = \frac{7}{x^3 - x}$

Solu:

.....

.....

10) Find $\frac{dy}{dx}$ if $y = \frac{x+1}{3x^2-5x}$

Solu:

.....

.....



⑤ الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - الأداء المنزلى - الأسبوع الخامس ⑤

First: Algebra Unit 1(Sequences and series continue)

1) Find: $\sum_{r=1}^{60} (2r - 3)$

Solu:

.....

.....

2) Find sum of the arithmetic series: $8 + 10 + 12 + \dots + 88$

Solu:

.....

.....

3) In the arithmetic series: $3 + 7 + 11 + 15 + \dots$

Find sum of 10 terms of the series starting with its sixth term.

Solu:

.....

.....

4) Find the sum of all NATURAL numbers between 5 and 555 that are divisible by 10.

Solu:

.....

.....

5) How many terms should be taken from the arithmetic sequence?

(33, 30, 27,), starting from its first term for the sum is to be maximum, then find that sum.

Solu:

.....

.....



6) Find sum of the first 50 terms of the sequence (T_n) , where $T_n = 4n - 3$

Solu:

.....

.....

Second: Calculus and integration **Unit 3: Differentiation**

7) Find $\frac{dy}{dx}$ if: $y = \sqrt{x} (\sqrt{x} + 7)$, then find $\frac{dy}{dx}$ at $x = 1$

Solu:

.....

.....

8) Find $\frac{dy}{dx}$ if: $y = (3x^4 + 2x)(5x - 2)$

Solu:

.....

.....

9) Find $\frac{dy}{dx}$ if $y = \frac{x-1}{x+1}$

Solu:

.....

.....

10) Find $\frac{dy}{dx}$ if $y = \frac{x^2}{2x+7}$

Solu:

.....

.....



⑤ الرياضيات العامة لغات - للصف الثانى الثانوى - الشعبة الأدبية - التقييمات الأسبوعية - الأسبوع الخامس ⑤

First Group

1) Find: $\sum_{r=1}^{70} (2r + 8)$

Solu:

.....

.....

.....

2) Find sum of the arithmetic series: $6 + 10 + 14 + \dots + 202$

Solu:

.....

.....

.....

3) Find the sum of all Natural numbers between 9 and 999 that are divisible by 9.

Solu:

.....

.....

.....

4) Find $\frac{dy}{dx}$ if: $y = \frac{2x}{x+1}$

Solu:

.....

5) Find $\frac{dy}{dx}$ if: $y = (x + 2)(x^2 - 2x + 4)$

Solu:

.....

.....



Second Group

1) Find: $\sum_{r=1}^{80} (3r + 2)$

Solu:

.....

.....

.....

2) Find sum of the arithmetic series: $4 + 10 + 16 + \dots + 598$

Solu:

.....

.....

.....

3) Find the sum of all Natural numbers between 7 and 777 that are divisible by 7.

Solu:

.....

.....

.....

4) Find $\frac{dy}{dx} : y = \frac{4x}{x-5}$

Solu:

.....

.....

.....

5) Find $\frac{dy}{dx}$ if: $y = (x + 3)(x^2 - 3x + 9)$

Solu:

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.....

.....



Third Group

1) Find: $\sum_{r=1}^{90} (7r - 2)$

Solu:

.....

.....

.....

2) Find sum of the arithmetic series: $7 + 12 + 17 + \dots + 502$

Solu:

.....

.....

.....

3) Find the sum of all NATURAL numbers between 8 and 888 that are divisible by 8.

Solu:

.....

.....

.....

4) Find $\frac{dy}{dx}$: $y = \frac{6x}{x+9}$

Solu:

.....

.....

.....

5) Find $\frac{dy}{dx}$ if: $y = (x + 5)(x^2 - 5x + 25)$

Solu:

.....

.....

.....



⑥ الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - الأداء الصفى - الأسبوع السادس ⑥

First: Algebra Unit 1(Sequences and series -continue)

1) Find the arithmetic sequence (T_n) in which $T_7 = 11$ and $T_6 = 13$

Solu:

2) Find the number of terms of the arithmetic sequence

(1 , 5 , 9 , , 77) ,then find the sum of its terms.

Solu:

3) Find the arithmetic sequence (T_n) in which $T_1 = 5$ and $T_8 = 40$

Solu:

4) Find the arithmetic sequence (T_n) in which first term equals 1 , its last term equals 99 and its sum equals 2500 .

Solu:

5) Find the arithmetic sequence (T_n) in which the sum of the first three term equals zero and the sum of the first five terms equals 15 .

Solu:

6) Find the arithmetic sequence in which $T_4 = 5$ and $T_7 = 30$

Solu:



Second: Calculus and integration Unit 3: Differentiation

7) Find $\frac{dy}{dx}$ if: $y = x + \frac{1}{x}$

Solu:

.....

.....

.....

8) Find $\frac{dy}{dx}$ if: $y = \frac{x}{x^2+1}$, then find $\frac{dy}{dx}$ at $x = 1$

Solu:

.....

.....

.....

9) Find $\frac{dy}{dx}$ if $y = (5x^2 - 7x)^5$

Solu:

.....

.....

.....

10) Find $\frac{dy}{dx}$ if $y = z^2 + 3$ and $z = \frac{1}{x}$

Solu:

.....

.....

.....



⑥ الرياضيات العامة لغات - لصف الثانى الثانوي - الشعبة الأدبية - الأداء المنزلى - الأسبوع السادس ⑥

First: Algebra Unit 1(Sequences and series- continue)

1) Find the arithmetic sequence (T_n) in which $T_7 = 15$ and $T_6 = 17$

Solu:

2) Find the number of terms of the arithmetic sequence

(2 , 6 , 10 , , 78) ,then find the sum of its terms.

Solu:

3) Find the arithmetic sequence (T_n) in which $T_1 = 6$ and $T_8 = 41$

Solu:

4) Find the arithmetic sequence (T_n) in which first term equals 2 , its last term equals 100 and its sum equals 5100 .

Solu:

5) Find the arithmetic sequence (T_n) in which the sum of the first five term equals zero and the sixth term equals 9 .

Solu:

6) Find the arithmetic sequence in which $T_4 = 22$ and $T_7 = 31$

Solu:



Second: Calculus and integration Unit 3: Differentiation

7) Find $\frac{dy}{dx}$ if: $y = 3x - \frac{4}{x}$

Solu:

.....

.....

.....

8) Find $\frac{dy}{dx}$ if: $y = \frac{5x}{x^3+x}$, then find $\frac{dy}{dx}$ at $x = 2$

Solu:

.....

.....

.....

9) Find $\frac{dy}{dx}$ if $y = (2x^3 + 1)^7$

Solu:

.....

.....

.....

10) Find $\frac{dy}{dx}$ if $y = z^3 + 1$ and $z = \frac{1}{x}$

Solu:

.....

.....

.....



⑥ الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - التقييمات الأسبوعية - الأسبوع السادس ⑥

First Group

1) Find the arithmetic sequence (T_n) in which $T_2 = 14$ and $T_3 = 21$

Solu:
.....
.....

2) Find the number of terms of the arithmetic sequence

(5 , 9 , 13 , , 81) , then find the sum of its terms.

Solu:
.....
.....

3) Find the arithmetic sequence (T_n) in which first term equals -14 , its last term equals 62 and its sum equals 480 .

Solu:
.....
.....

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^2}{3x^4 - 4}$

Solu:
.....
.....

5) Find $\frac{dy}{dx}$ if: $y = (3x^2 + 2x + 1)^5$

Solu:
.....
.....



Second Group

1) Find the arithmetic sequence (T_n) in which $T_4 = 6$ and $T_5 = 10$

Solu:
.....
.....

2) Find the number of terms of the arithmetic sequence

(6 , 10 , 14 , , 82) , then find the sum of its terms.

Solu:
.....
.....

3) Find the arithmetic sequence (T_n) in which first term equals -15 , its last term equals 61 and its sum equals 920 .

Solu:
.....
.....

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^3}{5x^2+1}$

Solu:
.....
.....

5) Find $\frac{dy}{dx}$ if: $y = (5x^3 + 6x + 7)^6$

Solu:
.....
.....



Third Group

1) Find the arithmetic sequence (T_n) in which $T_7 = 9$ and $T_8 = 11$

Solu:
.....
.....

2) Find the number of terms of the arithmetic sequence

(7 , 11 , 15 , , 83) , then find the sum of its terms.

Solu:
.....
.....

3) Find the arithmetic sequence (T_n) in which first term equals -6 , its last term equals 96 and its sum equals 810 .

Solu:
.....
.....

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^2}{4x^3+1}$

Solu:
.....
.....

5) Find $\frac{dy}{dx}$ if: $y = (6x^2 + 2x + 1)^9$

Solu:
.....
.....

حل بقسيم الصف الثاني لبتاوى
القيم الادي
الاضيق الثالث

First Group

Prove that

(1) $T_n = 7n + 1$ is arithmetic

$$\therefore T_{n+1} - T_n$$

$$= 7(n+1) + 1 - 7n + 1$$

$$= \cancel{7n} + 7 + \cancel{-7n} = 7 \text{ Constant}$$

$\therefore T_n = 7n + 1$ is arithmetic

and its common difference = **7**

(2) $T_1 = 5$ Common difference is 2

5, 7, 9, 11, 13, 15

Marwa
Salama

Prove
(3) T_n

$$T_1 =$$

$$T_2 =$$

$$T_3 =$$

(4)

Then
whose
wh

(4) The

Fund

PL2

FC

FC

Prove that

(3) $T_n = 3n + 1$ is increasing sequence

$$T_1 = 3(1) + 1 = 4$$

$$T_2 = 3(2) + 1 = 7$$

$$T_3 = 3(3) + 1 = 10$$

$$(4, 7, 10, \dots)$$



Then the sequence is increasing
whose base $d = 3 > 0$
which its base is positive number.

(4) The slope of the tangent of

Function $y = f(x) = \sqrt{2x}$

$$P(2, 2) = \tan \alpha = \lim_{h \rightarrow 0} \frac{f(2+h) - f(2)}{h}$$

$$f(2+h) = \sqrt{2(2+h)} = \sqrt{4+2h}$$

$$f(2) = \sqrt{2(2)} = \sqrt{4} = 2$$

$$\lim_{h \rightarrow 0} \frac{\sqrt{4+2h} - 2}{h}$$

$$= \lim_{h \rightarrow 0} \frac{(2h+4)^{\frac{1}{2}} - (4)^{\frac{1}{2}}}{h}$$

$$= \frac{1}{2} (4)^{\frac{1}{2}} = \frac{1}{4}$$

(5)

$$F(x) = x + 4$$

$$F'(x) = 1$$

Marwa
Salama

Second Group

$$(1) T_n = 3n + 3$$

$$\therefore T_{n+1} - T_n = 3(n+1) + 3 - 3n - 3$$

$$= \cancel{3n} + 3 + \cancel{3} - \cancel{3n} - \cancel{3} = 3 \text{ Constant}$$

$\therefore$ Then $T_n = 3n + 3$ is arithmetic

(2) $T_1 = 9$ Common difference = 3

$$9, 12, 15, 18, 21, 24, 27$$

(3) Prove that $T_n = 4n + 3$ is an increasing sequence

$$T_1 = 4(1) + 3 = 7$$

$$T_2 = 4(2) + 3 = 11$$

$$T_3 = 4(3) + 3 = 15$$

$$T_4 = 4(4) + 3 = 19$$

$$(7, 11, 15, 19)$$

$$d = 4 > 0$$

Then $\therefore T_n = 4n + 3$ is an increasing sequence.

(4) The slope of the tangent of

function $y = f(x) = \sqrt{3x}$ Point $(3, 3)$

$$\tan \alpha = \lim_{h \rightarrow 0} \frac{f(3+h) - f(3)}{h}$$



$$F(3+h) = \sqrt{3(3+h)} = \sqrt{9+3h}$$

$$F(3) = \sqrt{3(3)} = \sqrt{9} = 3$$

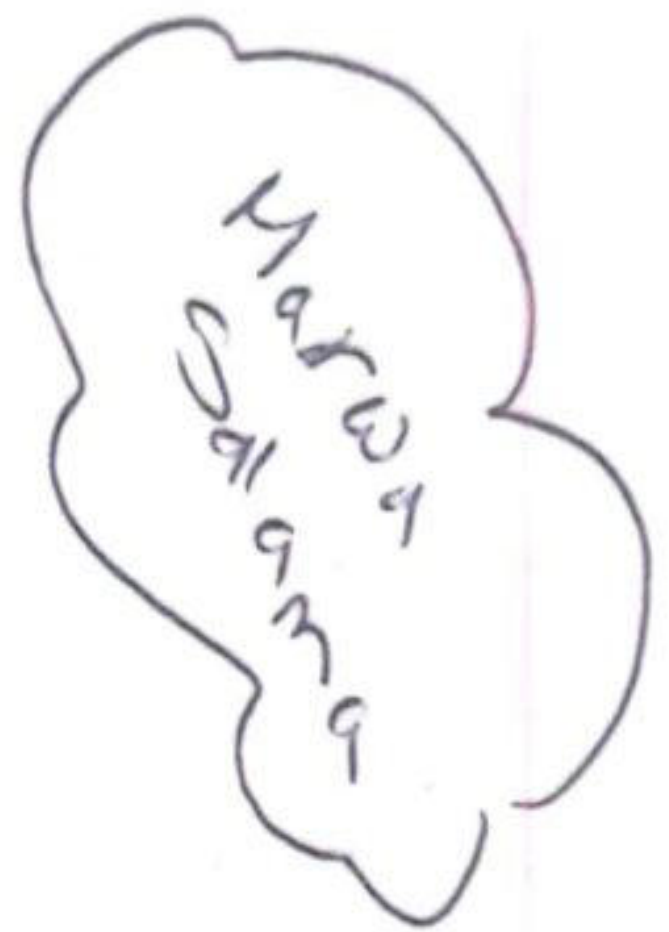
$$\lim_{h \rightarrow 0} \frac{\sqrt{9+3h} - \sqrt{9}}{h}$$

$$\lim_{h \rightarrow 0} \frac{(9+3h)^{\frac{1}{2}} - (9)^{\frac{1}{2}}}{h} = \frac{1}{2}(9)^{\frac{1}{2}} = \frac{3}{2}$$

$$(5) \quad F(x) = x + 5$$

$$F'(x) = 1$$

third Group



$$(1) \quad T_n = n + 1$$

$$\therefore T_{n+1} - T_n = \cancel{n+1} - \cancel{n+1} = 1$$

Common difference = 1

$\therefore T_n$ is arithmetic sequence

2) $T_1 = 2$ Common difference is 2

(2, 4, 6, 8, 10, 12)

$$(3) T_n = 5n + 7$$

$$T_1 = 5(1) + 7 = 12$$

$$T_2 = 5(2) + 7 = 17$$

$$T_3 = 5(3) + 7 = 22$$

$$T_4 = 5(4) + 7 = 27$$

Marwa
Salama

$$d = 17 - 12 = 5 > 0$$

$\therefore T_n$ is increasing sequence

(4) The slope of the tangent of

Function $F(x) = \sqrt{5x}$ point (5, 5)

$$\begin{aligned} \lim_{h \rightarrow 0} \frac{F(5+h) - F(5)}{h} &= \lim_{h \rightarrow 0} \frac{\sqrt{5(5+h)} - \sqrt{5(5)}}{h} \\ &= \lim_{h \rightarrow 0} \frac{(25+5h)^{\frac{1}{2}} - (25)^{\frac{1}{2}}}{h} = \frac{1}{2} (25)^{-\frac{1}{2}} = \frac{1}{2} (5)^{-\frac{1}{2}} = \frac{5}{2} \end{aligned}$$

(5)

$$f(x) = x + 6$$

$$f'(x) = 1$$



Date: / /

التاريخ: / /

Subject: موضوع الدرس:

Secondary two art section

Evaluation (3) Fourth week.

First Group

① 1, 3, 5, —, 99

$$T_1 = 1 = n$$

$$T_2 = 3 = 1 + 2^1 = n + 1$$

$$T_3 = 5 = 1 + 2^2 = n + 2$$

$$T_4 = 7 = 1 + 2^3 = n + 3$$

$$T_n = 1 + (2)^{(n-1)} \quad \text{General term}$$

$$\begin{aligned} \textcircled{2} \quad T_{12} &= 11 & T_{11} &= 12 \\ a + 11d &= 11 & \left. \begin{array}{l} \\ \end{array} \right\} & \begin{array}{|l|l|l|} \hline \text{Mode} & \text{eqn} & \text{I/O} \\ \hline \end{array} \\ a + 10d &= 12 & \end{aligned}$$

$$d = -1$$

$$T_1 = a = 22$$

$$\text{Sequence} = \{22, 21, 20, 19, 18, \dots\}$$

①

Date: / /

التاريخ: / /

Subject:

موضوع الدرس:

First Group

(3) Insert 21 arithmetic means between

5 and 115

$$d = \frac{b-a}{n+1} = \frac{115-5}{21+1}$$

$$115 = 5 + 22d$$

$$d = 5$$

$$d = \frac{110}{22} = 5$$

5, 10, 15, 20, 25, 30, ..., 115

(4) Find $\frac{dy}{dx}$ for

$$a) y = x^6 \quad \frac{dy}{dx} = y' = 6x^5$$

$$b) y = -7 \quad \frac{dy}{dx} = 0$$

(5) Find $\frac{dy}{dx}$ for

$$a) y = \sqrt{x^5} \quad \frac{dy}{dx} = (x^5)^{\frac{1}{2}} = \frac{5}{2} x^{\frac{5}{2}-1} = \frac{5}{2} x^{\frac{3}{2}}$$

$$b) y = \frac{1}{x^3} = (x^3)^{-1} = \frac{-3x^2}{(x^3)^2} = \frac{-3x^2}{x^6} = -3x^{-4}$$

(2)

Date: / /

التاريخ: / /

Subject: موضوع الدرس:

Second Group

(1) Find general term (2, 4, 6, —, 100)

$$T_1 = 2 = 1 + 1 = 2n$$

$$T_2 = 4 = 2n$$

$$T_3 = 6 = 2n$$

$$\text{Genal term} = T_n = 2n$$

(2) Find the arithmetic sequence T_n
in which $T_{13} = 12$ and $T_{12} = 13$

$$\begin{aligned} a + 12d &= 13 \\ a + 13d &= 12 \end{aligned} \quad \left. \begin{array}{l} \text{Solve by using Calcu} \\ \text{Mode Equ 1} \end{array} \right\}$$

$$d = \quad T_1 = a =$$

The sequence = _____

3

Date: / /

التاريخ: / /

Subject: موضوع الدرس: Second Group

(3) Insert 21 arithmetic mean between 4 and 114

$$d = \frac{b-a}{n+1} = \frac{114-4}{21+1} = \frac{110}{22}$$

$$d = 5$$

4, 9, 14, 19, 23, —

(4) a) $y = x^8$ $\frac{dy}{dx} = y' = 8y^7$

b) $y = -8$ $\frac{dy}{dx} = y' = 0$

(5) Find $\frac{dy}{dx}$ for each

$$y = \sqrt{x^7} = (x)^{\frac{7}{2}} = \frac{7}{2} (x)^{\frac{7}{2}-1} = \frac{7}{2} x^{\frac{5}{2}}$$

$$y = \frac{1}{x^5} \Rightarrow \frac{dy}{dx} = \frac{(g(x))'f(x) - f(x)g'(x)}{(g(x))^2}$$

$$= \frac{x^5(0) - 4x^5(1)}{(x^5)^2} = \frac{-4x^5}{x^{10}}$$

$$= -4x^{-5} \quad (4)$$

Date: / /

التاريخ: / /

Subject: موضوع الدرس:

Third Group

(1) Find General term of the arithmetic

Sequence (3, 6, 9, —, —, 99) then

Find the number of terms of that sequence

$$T_1 = 3 \times 1 = 3$$

$$T_3 = 9 = 3 \times 3$$

$$T_2 = 6 = 3 \times 2$$

$$T_4 = 12 = 3 \times 4$$

$$\boxed{T_n = 3n} \text{ General term}$$

$$T_{14} = 15 \quad T_{15} = 14$$

(3)

$$a + 14d = 15 \quad \left. \begin{array}{l} \\ \end{array} \right\} \text{ solve by using Calcu}$$

$$a + 15d = 14 \quad \left. \begin{array}{l} \\ \end{array} \right\} \boxed{\text{Mode}} \boxed{\text{Eqn}} \boxed{1}$$

$$T_1 = a =$$

$$d =$$

$$\text{Sequence} = \{ \text{---} \}$$

(5)

Date: / /

التاريخ: / /

Subject: موضوع الدرس:

(3) insert 21 arithmetic sequence between 3 and 113

$$d = \frac{b-a}{n+1} = \frac{113-3}{21+1} = \frac{110}{22} = 5$$

$$\therefore \{ 3, 8, 13, 18, 23, \dots \}$$

$$(4) a = y^4 \quad \frac{dy}{dx} = 4y^3 \quad y = 8$$

$$y' = \text{Zero}$$

$$(5) \text{ find } \frac{dy}{dx}$$

$$y = \sqrt{x^3} = (x^3)^{\frac{1}{2}} = x^{\frac{3}{2}} \Rightarrow$$

$$y' = \frac{3}{2} x^{\frac{3}{2}-1} = \frac{3}{2} x^{\frac{1}{2}}$$

(6)

(7)

1) Find the arithmetic sequence (T_n) in which $T_2 = 14$ and $T_3 = 21$

Solu: $a + d = 14$ $a = 7$
 $a + 2d = 21$
 $d = 7$
A.S. = $(7, 14, 21, \dots)$

2) Find the number of terms of the arithmetic sequence

$(5, 9, 13, \dots, 81)$, then find the sum of its terms.

Solu: $81 = 5 + (n-1)4$ $S_{20} = \frac{20}{2} [5 + 81]$
 $81 = 5 + 4n - 4$ 10×86
 $80 = 4n$ 860
 $n = 20$

3) Find the arithmetic sequence (T_n) in which first term equals -14, its last term equals 62 and its sum equals 480.

Solu: $a = -14$
 $T_n = 62$
 $S_n = 480$

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^2}{3x^4 - 4}$

(5, 9, 13,, 81), then find the sum of its terms.

Solu: $81 = 5 + (n-1)4$ | $S_{20} = \frac{20}{2} [5 + 81]$
 $81 = 5 + 4n - 4$ | 10×86
 $80 = 4n$ | 860
 $n = 20$

3) Find the arithmetic sequence (T_n) in which first term equals -14, its last term equals 62 and its sum equals 480.

Solu: $a = -14$, $L = 62$ | $a + 19d = 62$
 $480 = \frac{n}{2} [-14 + 62]$ | $-14 + 19d = 62$
 $n = 20$ | $19d = 62 + 14$ | $d = 4$
 $A.S. = (-14, 10, 14, \dots)$

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^2}{3x^4 - 4}$

Solu:

5) Find $\frac{dy}{dx}$ if: $y = (3x^2 + 2x + 1)^5$

Solu:

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^2}{3x^4-4}$

Solu:

$$\frac{dy}{dx} = \frac{2x(3x^4-4) - 12x^3 \cdot x^2}{(3x^4-4)^2}$$

5) Find $\frac{dy}{dx}$ if: $y = (3x^2 + 2x + 1)^5$

Solu:

$$\frac{dy}{dx} = 5(3x^2+2x+1)^4 (6x+2)$$

Solu: $a + 3d = 6$ $A.S = (-6, -2, 2, \dots)$
 $a + 4d = 10$
 $d = 4$
 $a = -6$

2) Find the number of terms of the arithmetic sequence

(6, 10, 14,, 82), then find the sum of its terms.

Solu: $82 = 6 + (n-1) \times 4$ $S_{20} = \frac{20}{2} [6 + 82]$
 $82 = 6 + 4n - 4$ 10×88
 $n = 20$ $= 880$

3) Find the arithmetic sequence (T_n) in which first term equals -15, its last term equals 61 and its sum equals 920.

Solu:

...

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^3}{5x^2+1}$

Solu: $82 = 6 + (n-1) \times 4$ | $S_{20} = \frac{20}{2} [6 + 82]$
 $82 = 6 + 4n - 4$ | 10×88
 $n = 20$ | $= 880$

- 3) Find the arithmetic sequence (T_n) in which first term equals -15 , its last term equals 61 and its sum equals 920 .

Solu: $a = -15$ | $L = 61$ | $T_{40} = a + 39d = 61$
 $920 = \frac{n}{2} [-15 + 61]$ | $-15 + 39d = 61$
 $n = 40$ | $d = 19$

- 4) Find $\frac{dy}{dx}$ if: $y = \frac{x^3}{5x^2+1}$

Solu:

- 5) Find $\frac{dy}{dx}$ if: $y = (5x^3 + 6x + 7)^6$

Solu:

61 and its sum equals 920.

Solu:

$$\left. \begin{aligned} a &= -15 \\ L &= 61 \end{aligned} \right\} \quad \left| \begin{aligned} 920 &= \frac{n}{2} [-15 + 61] \\ n &= 40 \end{aligned} \right.$$

$$\begin{aligned} 170 - 15n &= 61 \\ -15 + 39d &= 61 \\ d &= 19 \end{aligned}$$

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^3}{5x^2+1}$

Solu:

$$\frac{dy}{dx} = \frac{3x^2(5x^2+1) - 10x \cdot x^3}{(5x^2+1)^2}$$

5) Find $\frac{dy}{dx}$ if: $y = (5x^3 + 6x + 7)^6$

Solu:

$$\frac{dy}{dx} = 6(5x^3 + 6x + 7)^5 (15x^2 + 6)$$

Solu: $a + b d = 9$ (1) $AS (-3, -1, 1, \dots)$
 $a + 7d = 11$ (2)
 $d = 2$ $a = -3$

2) Find the number of terms of the arithmetic sequence

(7, 11, 15,, 83), then find the sum of its terms.

Solu: $83 = 7 + (n-1) \times 4$ $S_n = \frac{n}{2} [7 + 83] = \dots$
 $83 = 7 + 4n - 4$
 $80 = 4n$ $n = 20$

3) Find the arithmetic sequence (T_n) in which first term equals -6, its last term equals 96 and its sum equals 810.

Solu:

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^2}{4x^3 + 1}$

Solu:

Solu: $83 = 7 + (n-1) \times 4$ $S_{20} = \frac{20}{2} [7 + 83] = \dots$

$83 = 7 + 4n - 4$

$80 = 4n$ $n = 20$

- 3) Find the arithmetic sequence (T_n) in which first term equals -6 , its last term equals 96 and its sum equals 810 .

Solu: $a = -6$, $l = 96$, $S_n = 810 = \frac{n}{2} [-6 + 96]$

$9 = \frac{n}{2}$ $n = 18$

$T_{18} = a + 17d = 96$ $17d = 102$ $d = 6$

A.S = $(-6, 0, 6, \dots)$

- 4) Find $\frac{dy}{dx}$ if: $y = \frac{x^2}{4x^3+1}$

Solu: $\dots$

- 5) Find $\frac{dy}{dx}$ if: $y = (6x^2 + 2x + 1)^9$

Solu: $\dots$

$$T_{18} = a + 17d = 96 \quad 17d = 102 \quad d = 6$$

$$A.S = (-610, 6, \dots)$$

4) Find $\frac{dy}{dx}$ if: $y = \frac{x^2}{4x^3+1}$

Solu:

$$\frac{dy}{dx} = \frac{2x(4x^3+1) - 12x^3 \cdot x^2}{(4x^3+1)^2}$$

5) Find $\frac{dy}{dx}$ if: $y = (6x^2 + 2x + 1)^9$

Solu:

$$\frac{dy}{dx} = 9(6x^2 + 2x + 1)^8 (12x + 2)$$

⑥ الرياضيات العامة لغات - للصف الثانى الثانوي - الشعبة الأدبية - الأداء المنزلى - الأسبوع السادس

First: Algebra Unit 1 (Sequences and series- continue)

1) Find the arithmetic sequence (T_n) in which $T_7 = 15$ and $T_6 = 17$

Solu: $a + 6d = 15$
 $a + 5d = 17$
 $d = -2$
 $a = 27$
A.S. = $(27, 25, 23, \dots)$

2) Find the number of terms of the arithmetic sequence

$(2, 6, 10, \dots, 78)$, then find the sum of its terms.

Solu:

3) Find the arithmetic sequence (T_n) in which $T_1 = 6$ and $T_8 = 41$

Solu:

4) Find the arithmetic sequence (T_n) in which first term equals 2, its last term equals 100 and its sum equals 5100.

$$\begin{aligned} a + 5d &= 17 \\ d &= -2 \end{aligned}$$

2) Find the number of terms of the arithmetic sequence

(2, 6, 10,, 78), then find the sum of its terms.

Solu: $78 = 2 + (n-1) \times 4$ $n = 20$ $S_{20} = \frac{20}{2} [2 + 78]$
 $78 = 2 + 4n - 4$ $10 \times 80 = 800$
 $80 = 4n$

3) Find the arithmetic sequence (T_n) in which $T_1 = 6$ and $T_8 = 41$

Solu: $a = 6$ $a + 7d = 41$ $7d = 35$ $d = 5$ $128 = (6 + 11 + 16 + \dots)$
 $6 + 7d = 41$ $d = 5$

4) Find the arithmetic sequence (T_n) in which first term equals 2, its last term equals 100 and its sum equals 5100.

Solu:

5) Find the arithmetic sequence (T_n) in which the sum of the first five term equals zero and the sixth term equals 9.

$$\begin{aligned} a + 7d &= 41 \\ 6 + 7d &= 41 \end{aligned} \quad \bigg| \quad d = 9$$

4) Find the arithmetic sequence (T_n) in which first term equals 2, its last term equals 100 and its sum equals 5100.

$$\begin{aligned} \text{Solu: } S_n &= 5100 = \frac{n}{2} [2 + 100] & | & T_{100} = a + 99d = 100 \\ n &= 100 & | & 99d = 98 \quad d = \frac{98}{99} \end{aligned}$$

5) Find the arithmetic sequence (T_n) in which the sum of the first five term equals zero and the sixth term equals 9.

Solu:

.....

.....

6) Find the arithmetic sequence in which $T_4 = 22$ and $T_7 = 31$

Solu:

.....

.....

Solu: $\Rightarrow n = 2100 \div \frac{1}{2} (1 + 1100) \quad | \quad 1100 = a + 49d \quad \div 100$

$n = 100 \quad | \quad 99d = 98 \quad d = \frac{98}{99}$

5) Find the arithmetic sequence (T_n) in which the sum of the first five term equals zero and the sixth term equals 9.

Solu: $S_5 = 0 \quad \frac{5}{2} [2a + (5-1)d] = 0 \quad \text{①} \quad 2a + 4d = 0 \quad \begin{cases} a + 2d = 0 \end{cases}$

$d = 3 \quad \begin{cases} a = -6 \\ a + 3d = 9 \\ 3d = 9 \end{cases}$

A.S. = $(-6, -3, 0, \dots)$

6) Find the arithmetic sequence in which $T_4 = 22$ and $T_7 = 31$

Solu: $\begin{cases} a + 3d = 22 \quad \text{①} \\ a + 6d = 31 \quad \text{②} \end{cases}$

$3d = 9$

$d = 3$ in ①

$a = 13$

1 $(13, 16, 19, \dots)$

(3)

Solu:

$$y' = 3 + \frac{4}{x^2}$$

8) Find $\frac{dy}{dx}$ if: $y = \frac{5x}{x^3+x}$, then find $\frac{dy}{dx}$ at $x = 2$

Solu:

$$\frac{dy}{dx} = \frac{5(x^3+x) - 5x(3x^2+1)}{(x^3+x)^2} = \frac{5(10) - 10(13)}{100}$$
$$\frac{50 - 130}{100}$$

9) Find $\frac{dy}{dx}$ if $y = (2x^3 + 1)^7$

Solu:

Solu: $\frac{dy}{dx} = 7(2x^3+1)^6 \cdot 6x$

10) Find $\frac{dy}{dx}$ if $y = z^3 + 1$ and $z = \frac{1}{x}$

Solu: $y = (\frac{1}{x^3} + 1) = x^{-3} + 1$
 $y' = -3x^{-4} = \frac{-3}{x^4}$

6 الرياضيات العامة لغات - للصف الثاني الثانوي - الشعبة الأدبية - الأداء الصفی - الأسبوع السادس

First: Algebra Unit 1(Sequences and series -continue)

1) Find the arithmetic sequence (T_n) in which $T_7 = 11$ and $T_6 = 13$

Solu:

$$\begin{aligned} a + 6d &= 11 \quad (1) \\ a + 5d &= 13 \quad (2) \end{aligned}$$

$$d = -2$$

$$a - 12 = 11$$

$$a = 23$$

$$AS = (23, 21, 19, \dots)$$

2) Find the number of terms of the arithmetic sequence

(1, 5, 9,, 77), then find the sum of its terms.

Solu:

3) Find the arithmetic sequence (T_n) in which $T_1 = 5$ and $T_8 = 40$

Solu:

4) Find the arithmetic sequence (T_n) in which first term equals 1, its last term equals

Solu: $77 = 1 + (n-1) \times 4$ $S_{20} = \frac{20}{2} [1 + 77] \therefore$

$$77 = 1 + 4n - 4$$

$$80 = 4n$$

$$n = 20$$

3) Find the arithmetic sequence (T_n) in which $T_1 = 5$ and $T_8 = 40$

Solu: $a = 5$ $a + 7d = 40$ Ans. (5, 10, 15, ...)

$$7a = 35$$

$$d = 5$$

4) Find the arithmetic sequence (T_n) in which first term equals 1 , its last term equals 99 and its sum equals 2500 .

Solu:

5) Find the arithmetic sequence (T_n) in which the sum of the first three term equals zero and the sum of the first five terms equals 15 .

Solu:

99 and its sum equals 2500 .

Solu:

$$2500 = \frac{n}{2} [1 + 99]$$

$$n = 50$$

$$a = 1$$
$$L = 99$$

$$T_{50} = a + 49d = 99$$

$$49d = 98$$

$$d = 2$$

$$AS = (1, 3, 5, \dots)$$

5) Find the arithmetic sequence (T_n) in which the sum of the first three term equals zero and the sum of the first five terms equals 15 .

Solu:

$$\frac{n}{2} [2a + 2d] = 0$$

$$a = -d$$

$$\frac{5}{2} [2a + 4d] = 15$$

$$\frac{5}{2} [2(-d) + 4d] = 15$$

$$\frac{5}{2} [2a + 4d] = 15$$

$$a = -3$$

6) Find the arithmetic sequence in which $T_4 = 5$ and $T_7 = 30$

Solu:

99 and its sum equals 2500 .

Solu:

$$2500 = \frac{n}{2} [1 + 99]$$

$$n = 50$$

$$a = 1$$

$$L = 99$$

$$T_{50} = a + 49d = 99$$

$$49d = 98$$

$$d = 2$$

$$AS = (1, 3, 5, \dots)$$

5) Find the arithmetic sequence (T_n) in which the sum of the first three term equals zero and the sum of the first five terms equals 15 .

Solu:

$$\frac{n}{2} [2a + 2d] = 0$$

$$a = -d$$

$$\frac{5}{2} [2a + 4d] = 15$$

$$\frac{5}{2} [2(-d) + 4d] = 15$$

$$AS = (-3, -1, 1, 3, \dots)$$

$$\frac{5}{2} [2a + 4d] = 15$$

$$a = -3$$

$$d = 2$$

6) Find the arithmetic sequence in which $T_4 = 5$ and $T_7 = 30$

Solu:

99 and its sum equals 2500 .

Solu:

$$2500 = \frac{n}{2} [1 + 99]$$

$$n = 50$$

$$a = 1$$
$$L = 99$$

$$T_{50} = a + 49d = 99$$

$$49d = 98$$

$$d = 2$$

$$AS = (1, 3, 5, \dots)$$

5) Find the arithmetic sequence (T_n) in which the sum of the first three term equals zero and the sum of the first five terms equals 15 .

Solu:

$$\frac{n}{2} [2a + 2d] = 0$$

$$a = -d$$

$$\frac{5}{2} [2a + 4d] = 15$$

$$\frac{5}{2} \times 2a = 15$$

$$AS = (-3, -1, 1, 3, \dots)$$

$$\frac{5}{2} [2a + 4d] = 15$$

$$a = -3$$

$$d = 3$$

6) Find the arithmetic sequence in which $T_4 = 5$ and $T_7 = 30$

Solu:

$$a + 3d = 5$$

$$a + 6d = 30$$

$$3d = 25$$

$$d = \frac{25}{3}$$

$$a =$$

Solu:

$$\frac{dy}{dx} = 1 - \frac{1}{x^2}$$

8) Find $\frac{dy}{dx}$ if: $y = \frac{x}{x^2+1}$, then find $\frac{dy}{dx}$ at $x = 1$

Solu:

$$\frac{dy}{dx} = \frac{x^2+1 - 2x^2}{(x^2+1)^2} = \frac{2-2}{4} = 0$$

9) Find $\frac{dy}{dx}$ if $y = (5x^2 - 7x)^5$

Solu:

dx

Solu:

$$\frac{dy}{dx} = 5(5x^2 - 7x)(10x - 7)$$

10) Find $\frac{dy}{dx}$ if $y = z^2 + 3$ and $z = \frac{1}{x}$

Solu:

Solu:

$$\frac{dy}{dx} = \frac{d}{dx} \left(\frac{1}{x^2} + 3 \right)$$

10) Find $\frac{dy}{dx}$ if $y = z^2 + 3$ and $z = \frac{1}{x}$

Solu:

$$y = \frac{1}{x^2} + 3$$

$$\frac{dy}{dx} = \frac{-2}{x^3}$$

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

